

XPATH CONTAINMENT FOR INDEX AND MATERIALIZED VIEW MATCHING

ABSTRACT

A method for using pre-computed information stored in auxiliary structures to speed up processing of expensive queries on hierarchical documents such as XML documents being queried using XPath. The invention defines a taxonomy of such structures such as indexes and materialized views for storing pre-computed XPath results (PXR), determines what portion of the query can be evaluated by the structures, and computes the compensation for the results generated by the structures. The invention detects all structures applicable to the query and rewrites the query to use such structures, speeding up the performance of the queries. The invention identifies the matching structures by detecting containment mappings between XPath expressions in the query and the structure. The invention also includes a new representation for XPath expressions that is rich enough to express all features of XPath.